University of Tennessee, Memphis

Project Name ...

Health Opportunities with Physical Exercise (HOPE)

Principal Investigator ...

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Background / Significance of Problem ...

There has been an extensive accumulation of evidence that supports the premise that sedentary lifestyles are a primary cause of cardiovascular disease, cancer at certain important sites, and numerous other morbidities. Despite a high level of public knowledge of the protective impact of regular physical activity on coronary heart disease (CHD) and all-cause mortality, few Americans are regularly active. Only 22% of adults meet the recommended leisure time physical activity levels for health benefits as defined by the objectives of health People 2000. Overall percentages do not appear to capture the gradient that exists across the socioeconomic (SES) strata. Clearly, there are strata, such as urban-dwelling African-Americans where sedentary living constitutes a major threat to health. Recent studies document the steep gradient of increased mortality at all ages and from nearly every cause when comparisons are made between high SES groups and low SES groups. While the connection between lifestyle or health-related behaviors and disease clearly varies for each specific morbidity, sedentary behavior is, with rare exception, a dominant explanation for elevated morbidity and mortality among the socially and economically disadvantaged.

Research Question ...

The HOPE trial was designed to intentionally enroll mostly African American women with low incomes. It was designed to compare two theoretical models, which emphasize the importance of social influence in prompting behavior change. Social support theory and patient-provider communication theory were tested as viable models of socially oriented physical activity change based on tenets of Social Action Theory and Social Cognitive Theory. The HOPE intervention introduced social interaction processes to a novel environmental context to increase physical activity levels in previously sedentary, overweight persons. Social Action Theory posits that such social and environmental factors are necessary for behavior change.

Findings To-Date ...

- Initial planning and final protocol development were completed prior to the opening of the Hope and Healing Center in January, 2000. A total of 361 sedentary patients were screened and randomized to one of the three conditions during the next 15 months and 12-month follow-up windows were closed in August, 2002. Baseline anthropometric measurements were available for 361 participants, randomly assigned to Control (C), Peer mentor (P), or Health provider (H) conditions. There were no differences in body mass index (BMI), waist girth, or blood pressure among the three groups. However, because no upper bound for BMI was set in the actual study protocol, the average BMI of approximately 37 kg/m^2 was higher than expected, and about 25% of participants were above the commonly accepted threshold (BMI > 40) for morbid obesity. The average age of the participants was 47 years at baseline (range 28-68), 72% are African-American and 88% are female. Also, only 37.5% of the participants were married and few were unemployed.
- The Kaiser Physical Activity Survey was completed by all 361 randomized participants at the screening visit and 92.2% of the participants at the 12-month follow-up visit. As anticipated with a facility based physical activity intervention in which moderate activities were encouraged, the most conspicuous changes occurred from baseline to 12 months in the Sports Exercise Index (SEI), the Active Living Index (ALI), and the Occupational Index (OCU) ($p < .05$). Statistically significant increases were observed in the ALI and SEI indices for each of the three conditions ($p < .0001$). Statistically significant increases were observed OCU index for each of two intervention conditions, H and P ($p < .04$ and $p < .003$) but not controls. When analyzing longitudinal change at 6 and 12 months from baseline, the P group significantly increased OCU score over that of the C group ($p < .02$)

Implications ...

[for multibehavioral and multi-theoretical approaches to behavior change]

- This program was facility based and monitored by a phone/mail/face contact intervention format and delivered either by a peer mentor or a health provider. The preliminary results of HOPE trial suggest that for participants enrolled in a supportive physical activity program, to include regular participant contact, it is possible to increase physical activity levels in sedentary, overweight persons who begin exercising and moving. Further, it is possible to achieve change after one year of intervention in workplace activities that is greater than that of standard care intervention.
- Based on the findings cited above, the social networking and supportive aspects of the peer mentor intervention model is likely to have more lasting effects, and is likely to be more feasible as a low cost alternative to professional advice.

Future Research Directions ...

Follow-up of participants in exercise intervention trials has rarely exceeded one year. Strictly defined, the maintenance period usually begins when all intervention (phone contacts, mailed materials, etc.) ceases. However, a low cost extended intervention would seem to be a natural adjunct to an intervention phase that is often short duration (up to one year) and relatively expensive. Thus, future efforts will define two maintenance phases. Phase I, where low cost, infrequent (no more than one per month) phone and mail contacts are made followed by Phase II maintenance, where the only contact is to ascertain fitness and physical activity status.